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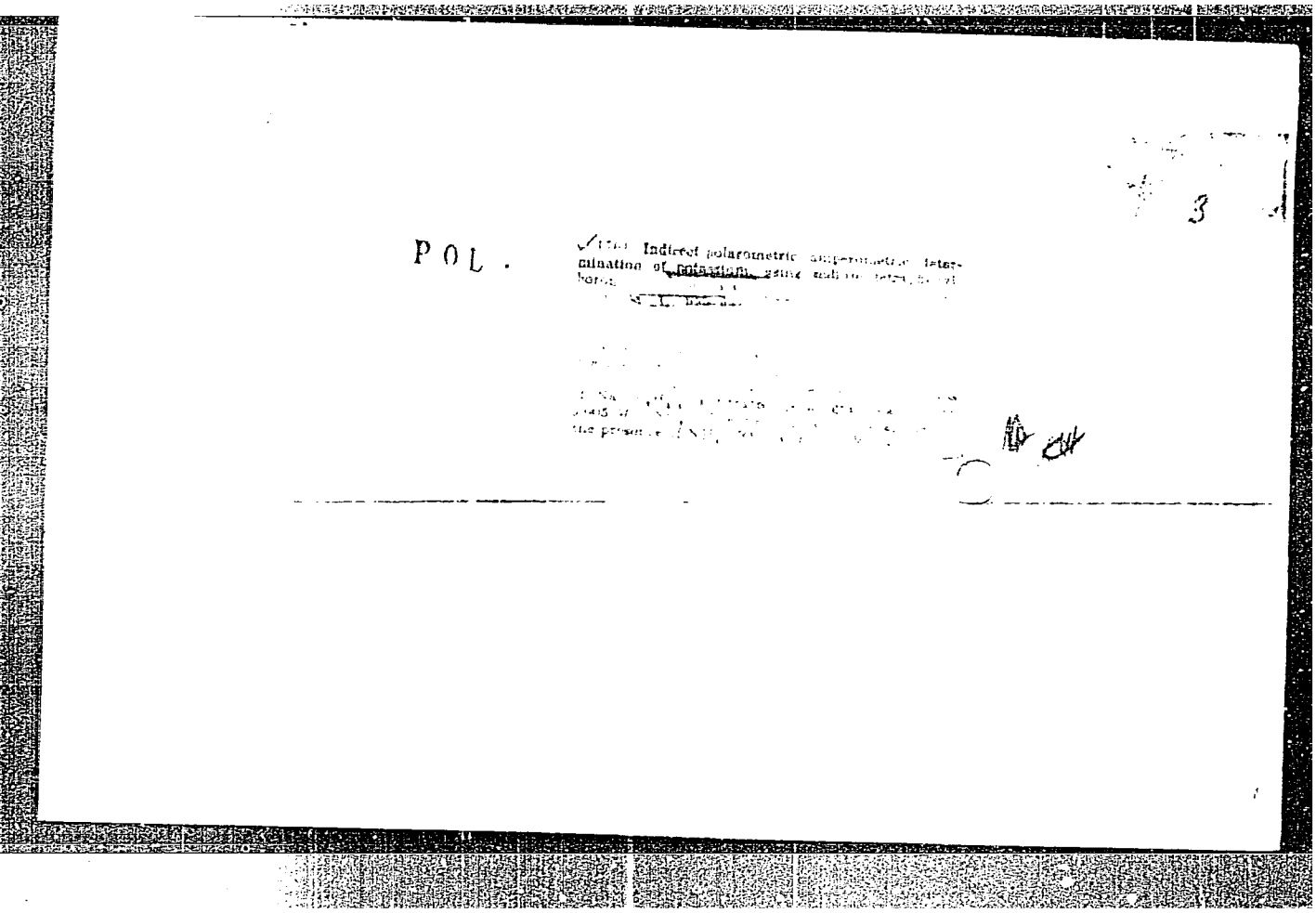

POL.

Indirect polarometric [illegible]

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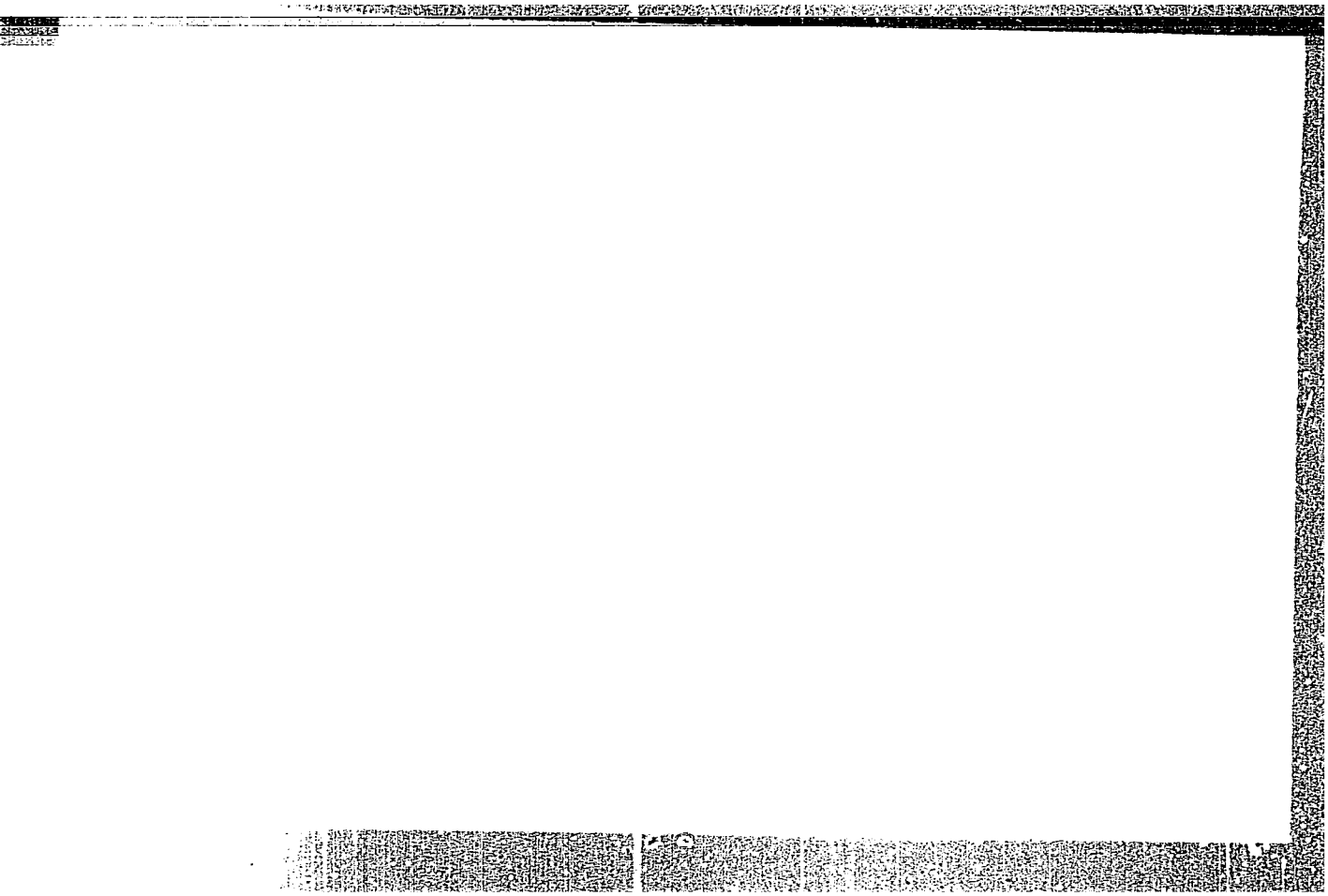

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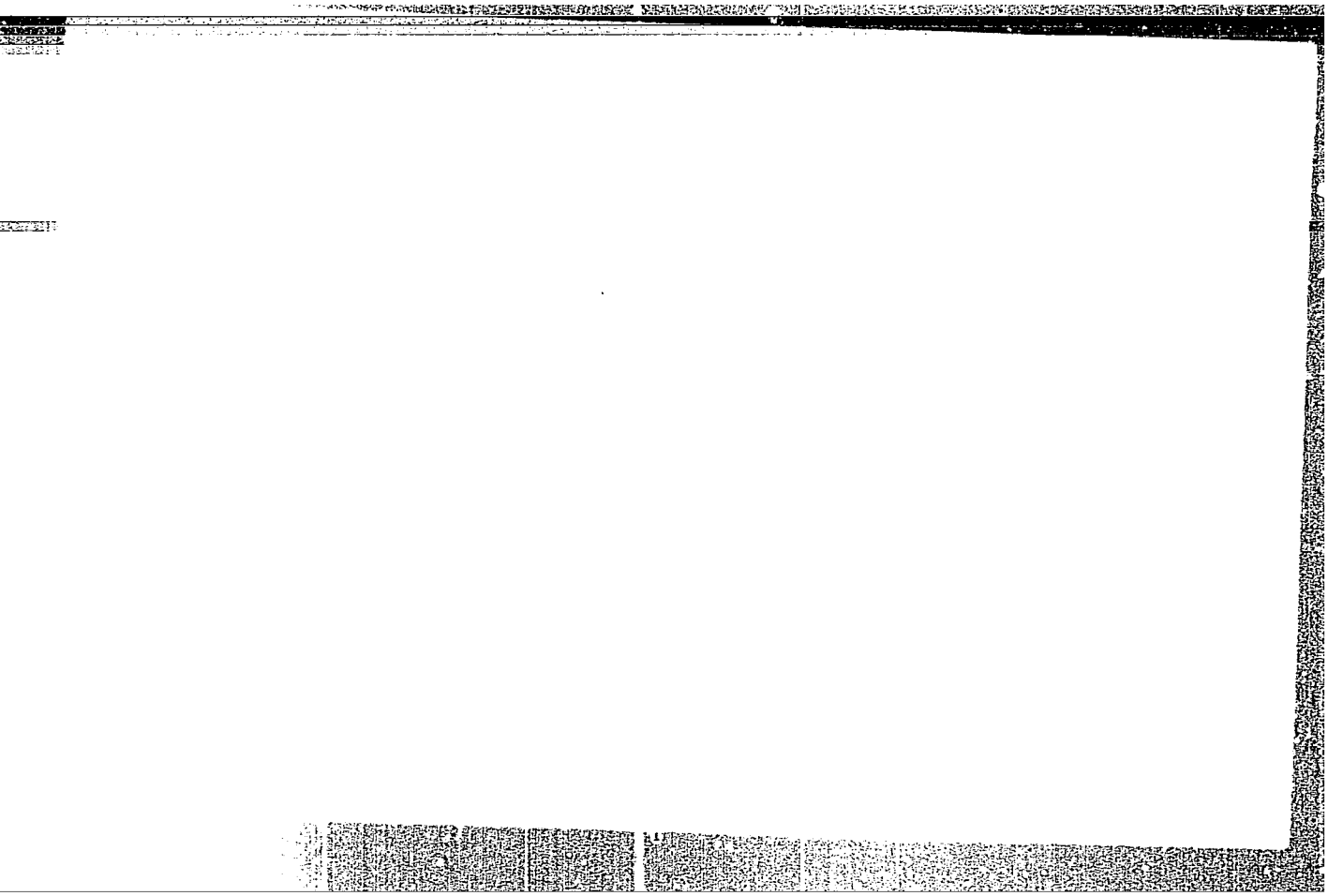

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Distr: 4E2c/4E3d

Spectrographic methods for the analysis of solutions. I. Analysis of components of zinc and magnesium alloys. W. Kemula, W. Brachaczek, and A. Hulanicki. *Przemysł Chem.* 11, 676-83(1955).--A spectrographic method for the analysis of solns. is described. The investigated soln. is sprayed continuously into the excitation zone by means of a simple device. Detns. of some metals in alloys have been carried out by using excitation in a condensed spark. The adaptability of the method for various analyses is discussed. The following concn. ranges of metals in Mg and Zn alloys have been detd.: Al 2-12, Mn 0.1-1.5, and Zn 0.3-0.6%. Standard errors of detns. have been 2.9, 4.7, and 4.0%, resp. Mg in Zn has been detd. in the concn. range of 0.005-10% with a standard error of 4.9%. The influence of variable content of Al in the investigated alloy on the displacement of analytical curve has been studied.

A. Libacky...

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, W.

Fiftieth anniversary of Professor Wojciech Swietoslawski's scientific activities. p. 151.

ROCZNIKI CHEMI, Warszawa, Vol. 29, no. 2/3, 1955.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, no. 10, Oct. 1955, Uncl.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, WIKTOR

Poland/Analytical Chemistry - General Questions, G-1

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61804

Author: Kemula, Wiktor; Witwicki, Jerzy

Institution: None

Title: Chromato-polarographic Investigations. V. Indirect Determination of Amino Acids in the Effluent Solution from a Chromatographic Column. VI. On Possible Utilization of Maxima for the Detection of Organic Substances in the Effluent Solution from a Chromatographic Column

Original Periodical: Badania chromato-poalrograficzne. V. Posrednie oznaczanie amino-kwasow w wycieku z kolumny chromatograficznej. VI. O mozliwosci wyzyskania maksimow do wykrywania substancji organicznych w wycieku z kolumny chromatograficznej, Roczn. chem., 1955, 29, No 4, 1153-1155; 1157-1159; Polish; English resumé

Abstract: V. Amino acids are lixiviated from the chromatographic column with 0.001 M solution of $(NH_4)_2SO_4$. The effluent is passed through a

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KEMULA, W.

Chromato-polarographic studies. III Separation of isomeric mixtures of nitro-compounds by partition chromatography. W. Kemula, D. Sybilska and J. Geisler. Rocz. Chem. 1955, 29 [illegible] Chromato-polarographic method of separation [illegible] stances by reversed phase partition chromatography is applied [illegible] the isomers of nitroanilines, chloronitrobenzenes and nitrophenols. Finely powdered gum is used as carrier for the [illegible] liquid. Heptane, chloroform, benzene, water or aq. solutions of methanol for developing the chromatograms and KCl (0.2 mol/l) as electrolyte dissolved in the active solvent. The substance contained in the stationary liquid in the column is eluted at 20±1°. The diffusion current of nitro compounds is measured in the presence of air by a micropolarograph which registers the changes of current with time. The composition of the eluates is analysed by means of an apparatus described in *ibid.* 1952, 26, 281. It has been found that the separating efficiency of a column filled with the same carrier depends on the quantity and quality of the mixture to be separated, on the pH of the percolating solution, on the stationary org. solvent, the admixture of dissolved inorg. compound, the rate of percolation, composition of the active phase etc. The conditions and technique for complete separation of the *p-*, *o-* and *m-* forms of the above nitro-compounds, and of chloronitrobenzene mixtures which normally occur in the products of technical chlorobenzene nitration are described and the reactions are illustrated by graphs. The adaptation of the method for quant. microanalytical determinations is discussed. (11 references.)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, W.

Chromatographic and polarographic studies. IV. Application of the catalytic effect to the evaluation of substances in the eluate not reducible on the dropping mercury electrode. Distribution of brucine and strychnine. p. 653.
ROCZNIKI CHEMII, Warszawa, Vol. 29, no. 2/3, 1955.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, no. 10, Oct. 1955, Uncl.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, W.

Buchowski, H. Partition equilibriums in dilute solutions. I. Relation between phase composition and partition coefficients. p. 718.
ROCZNIKI CHEMI, Warszawa, Vol. 29, no. 2/3, 1955.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, no. 10, Oct. 1955, Uncl.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

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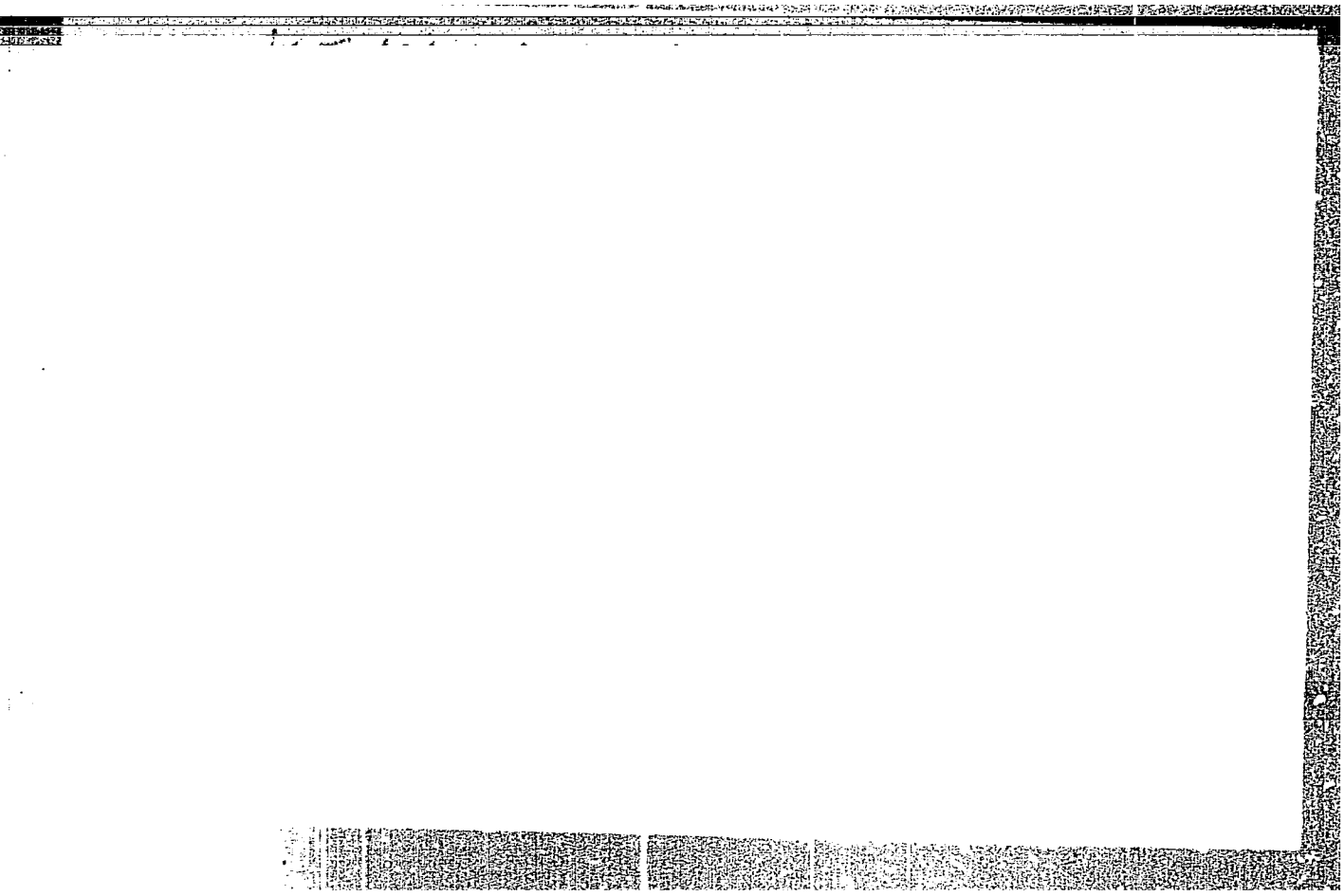

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1791. **Polarographic determination of nicotinic and isonicotinic acids and their amides in mixtures.** W. Kemula and V. Chodowski (Dept. Inorg. Chem. Univ., Warsaw). *Roczn. Chem.* 1955, **29** (2-3) 639–648.—Polarographic determinations of (*a*) isonicotinic acid in a mixture with nicotinic acid, (*b*) nicotinic acid in the presence of isonicotinic acid, (*c*) the amides of both acids in the presence of each other, (*d*) isonicotinic acid and its amide from a mixture of both and (*e*) nicotinic acid and its amide in the presence of each other, are described and the results are shown in tables and graphs. It was found that isonicotinic acid can be determined with an error of −7 to +5·4 per cent in a buffer solution of pH 7·96, after applying a correction (the isonicotinic wave rises by ≈ 10 per cent in the presence of nicotinic acid); nicotinic acid can be determined only qualitatively in mixtures with isonicotinic acid. The determination of the amides in the presence of each other at pH 12 gave satisfactory results. Acids and their corresponding amides in mixtures were determined by measuring the amide wave at pH 12 and the sum of acid plus amide wave at pH 6·7 and calculating the acid contents from the difference; the determination of isonicotinic acid and its amide is fairly satisfactory but that of nicotinic acid is less so.

J. C. I. Adams

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, W.

Siekierski, S.; Siekierska, K. Polarographic investigation of the kinetics of the formation $[In(CN)_6]^{4-}$ ion. p. 966.
ROCZNIKI CHEMI, Warszawa, Vol. 29, no. 2/3, 1955.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, no. 10, Oct. 1955, Uncl.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, W.

"Chromato-Polarographic Syudies. V. Indirect Determination of Amino Acids in Column Eluate," by W. Kemula and J. Witwicki. Roczniki Chemii, Vol. 29, No. 4, Warsaw, 1955. (Signed from the Chair of Inorganic Chemistry, University of Warsaw, 7 Jun 55).

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, W.

"Chromato-Polarographic Studies. VI. On the Possibility of Utilization of Maxima to the Detection of Organic Substances in a Solution Percolating from a Chromatographic Column," by W. KEMULA. Roczniki Chemii, Vol. 29,No 4, Warsaw, 1955. (Signed from the Chair of Inorganic Chemistry, University of Warsaw, 11 Jun 55).

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

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KEMULA, Wiktor

Spectral Analysis of ~~the Rays of Iesms~~ Emission. (Spektralna Analiza Emisyjna), by Wiktor KEMULA and Adam Hulanicki. Warsaw: Panstwowe Wydawnictwo Naukowe, 1956.

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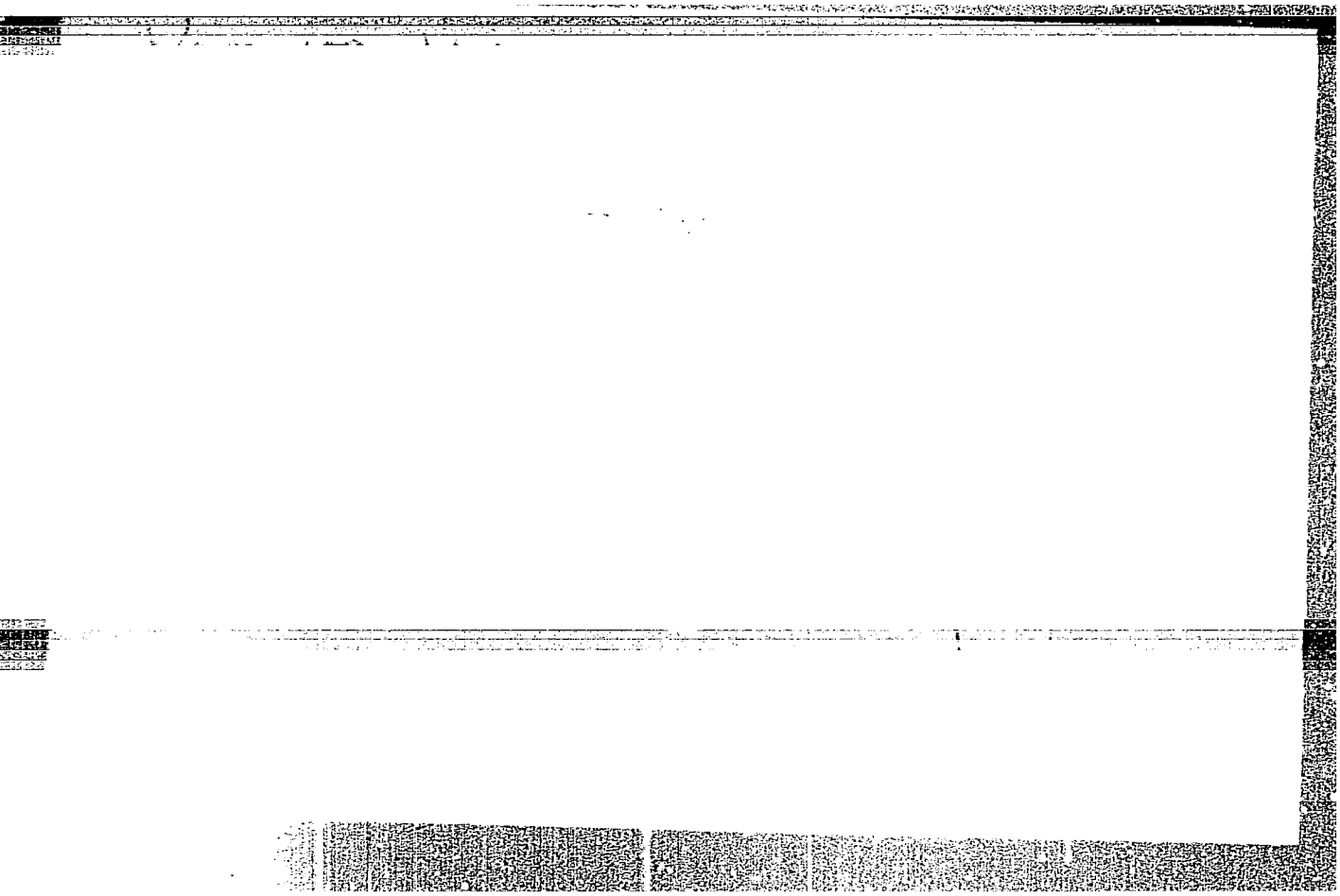

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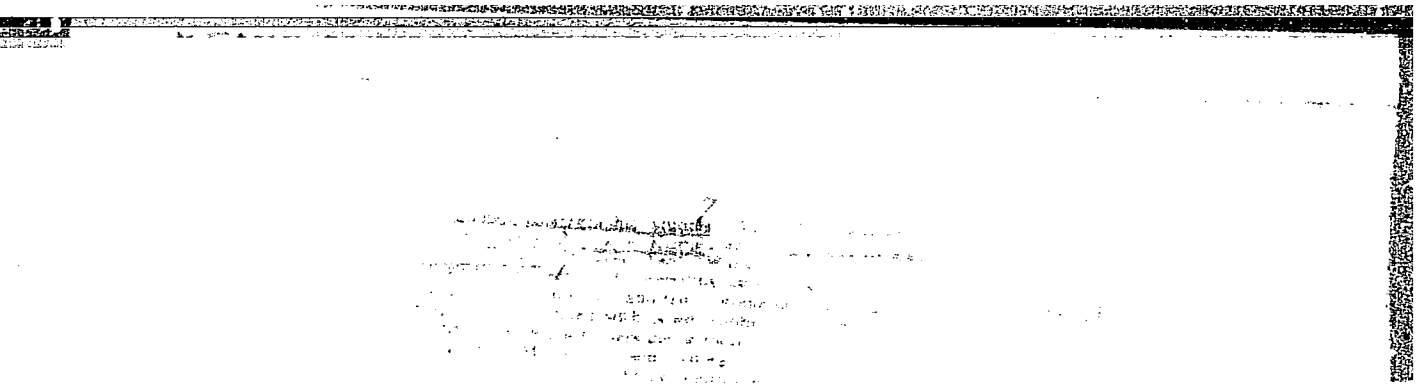

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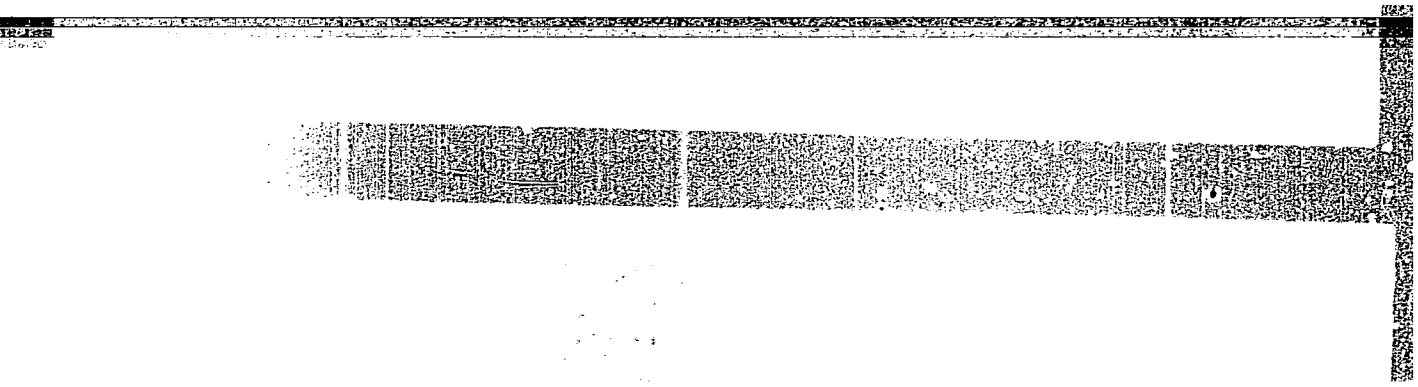

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

[redacted], W.; HULANICKI, A.:

"Spektralna analiza emisyjna" (Spectral emission analysis), by W. Kemula and A. Hulanicki. Reported in New Books (Nowe Ksiązki), No. 12, June 15, 1956.

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KEMULYA

POLAND/Optics - General Problems.

K-1

Abs Jour : Referat Zhur - Fizika, No 3, 1957, 7577

Author : Kemulya.
Inst :
Title : Sixth International Colloquium on Spectroscopy in Amsterdam

Orig Pub : Problemy, 1956, 12, No 7, 522-523

Abstract : No abstract.

Card 1/1

- 3 -

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

Distr: 4E2c(j)/4E3d

Polarographic determination of gammexane in the technical product of chlorination of benzene. W. Kemula and E. Weroński (University Warsaw, Poland). Przemysł Chem. 12(35), 51-3(1956)(English summary).—The distortion of the polarographic wave of the γ-isomer (I) in the tech. product prior to its reduction is eliminated by compensating for the residual current, and the one occurring after attaining the diffusion current by adding pure I to the sample to be tested and reading the current height at a potential corresponding to 80-90% of the wave height on a polarogram of pure I. The current height is measured by drawing a line through a part of the polarogram prior to the reduction of I. The correct line drawing on a highly distorted curve is ascertained by taking polarograms for increased I concns. obtained by adding pure I, and calcg. the content of I, which should be the same, in the tech. sample on the basis of the wave heights of these polarograms. Samples contg. small amts. of the α-hexachloro- and heptachlorocyclohexane give good results without having to resort to a concn. increase of I. In expts. cited 1% soln. of KI, KCl, and $N(CH_3)_4I$ contg. 0.005% gelatin were used as the basic electrolyte. Wave heights of the tech. sample and of pure I curves were read at the same potential.

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RB 1/1

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, WIKTOR

POLAND/Physical Chemistry - Electrochemistry B-12

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 3949

Author : Kemula Wiktor, Weronski Emilian
Title : New Interpretation of Inhibition of Electrode Processes at Mercury Drop Electrode in the Presence of Surface-Active Substances

Orig Pub : Roczn. chem., 1956, 30, No 1, 347-350

Abstract : Preliminary communication concerning investigations of the effect of addition of surface-active substances (SAS) C_6H_6, C_6H_{12}, n-C_7H_{14}, iso- C_8H_{16} and camphor, on polarographic reduction of Cu^{2+} ions (0.005 N) in 1 N H_3PO_4. Solubility of SAS was increased by addition of varying amounts of ethanol (I). From the shape of the curves which at certain concentration of I are of very irregular nature, the authors draw the conclusion that under these conditions there takes place at the surface

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

[redacted], [redacted]

Wiktor Kemula and Zenon Kublik: "The Application of the Steady "Hanging" Mercury Electrode to the Oscillopolarographic Investigations," Roczniki Chemii, Vol 30, No 3, Warsaw, 195[illegible]. Published from the Chair of Inorganic Chemistry, Warsaw University, 24 April 1956.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

POLAND / Physical Chemistry. Electrochemistry. B-12

Abs Jour: Ref Zhur-Khimiya, No 23, 1958, 76831.

Author : Kemula, W. amd Kublik, Z.
Inst : Not given.
Title : Oscillographic Polarographic Potentials of Electrode Processes.

Orig Pub: Roczniki Chem, 30, No 4, 1259-1273 (1956) (in Polish with summaries in English and in Russian).

Abstract: Using the oscillographic method of Geyrov for the recording of the (V,t) characteristics (accuracy ± 0.02 v), the authors have measured the cathodic and anodic polarographic potentials of the following ions: Tl(+), Cu (2+), Pb(2+), Cd(2+), Zn(2+), Mn(2+), Fe(2+), Co(2+), Ni(2+), Cr(3+), Al(3+), As(3+), Sb(3+), Bi(3+), Sn(2+), and Sn(4+) against 18 different backgrounds of

Card 1/2

KEMULYA, STAKHORSKIY

POLAND / Analytical Chemistry. Analysis of Organic Substances E-3

Abs Jour : Ref Zhur - Khim., No 7, 1958, No 21243

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

Author : Komulya, Stakhurskiy
Inst : Not given
Title : Chromato-Polarographic Research XI. Conditions for the Division of Strychnine and Brucine.

Orig Pub : Roczn. chem., 1956, 30, No 4, 1285-1294.

Abstract : The division of brucine and strychnine by the method of reversed distributive chromatography is described. The concentration of alkaloids in an elution is determined by means of measuring the catalytic waves of hydrogen (CWH). The carrier -- rubber, immobile phase -- benzol (I), mobile phase -- 30% aqueous solution of ethanol, saturated with I, containing KJ (II) and borate buffer (III) with pH 8. The presence of O2 in the solution causes an increase in the

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POLAND / Analytical Chemistry. Analysis of Organic Substances. E-3

Abs Jour : Ref Zhur - Khim., No 7, 1958, No 21243

Abstract : height of CWH, but the

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found to be 8.2. On the basis of the changes in adsorbance spectrum of DB depending on pH the value for pK_{DBH^+} was found to be 1.82 ± 0.05 . pK' $\gg$ pK, hence, the first wave probably corresponds to the reduction of the DBH^+ ion and the second one - of the molecule DB. Prior to the reduction of DBH^+ at pH $>$ pK a rapid reaction of DB $\rightarrow$ DBH^+ must take place. According to the Koutezki's equation (R. Zh. Khim., 1955, 3497), a constant of that conversion was found to be abnormally large ($K = 5 \pm 0.2 \cdot 10^{14}$ mole $^{-1}$. l . sec^{-1}). It proves that the reaction is dependant not only on hydronium ions but on the other proton donors as well which are present in solution.

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KEMULA, W. PRZYBYLOWICZ.

Latent limiting currents on solid electrodes with large surfaces.

P. 211 (Roczniki Chemii) Vol. 31, No. 1, 1957, Warszawa, Poland.

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC. VOL. 7, NO. 1, JAN. 1958

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KEMULA WIKTOR

POLAND/Physical Chemistry - Electrochemistry. B-12

Abs Jour : Ref Zhur - Khimiya, No 8, 1958, 24333

Author : Kemula Wiktor, Przybylowicz Zbigniew
Inst :
Title : Latent Limit Currents at Solid Electrodes of Large Surface

Orig Pub : Roczn. chem., 1957, 31, No 1, 221-227

Abstract : At Pt- and Cu-electrodes in the shape of plane plates (total surface area 38.5 cm^2) with agitation of the solution by an electromagnetic stirrer, reproducible cathodic diffusion currents were obtained. Occurence of latent limit currents (Kemula W., Grabowski Z., Rocznı. Chem., 1952, 26, 266) is observed in the case of conjoint presence of oxygen and H^+ ions, or of oxygen and Cu^{2+} ions in saturated K_2SO_4 solution.

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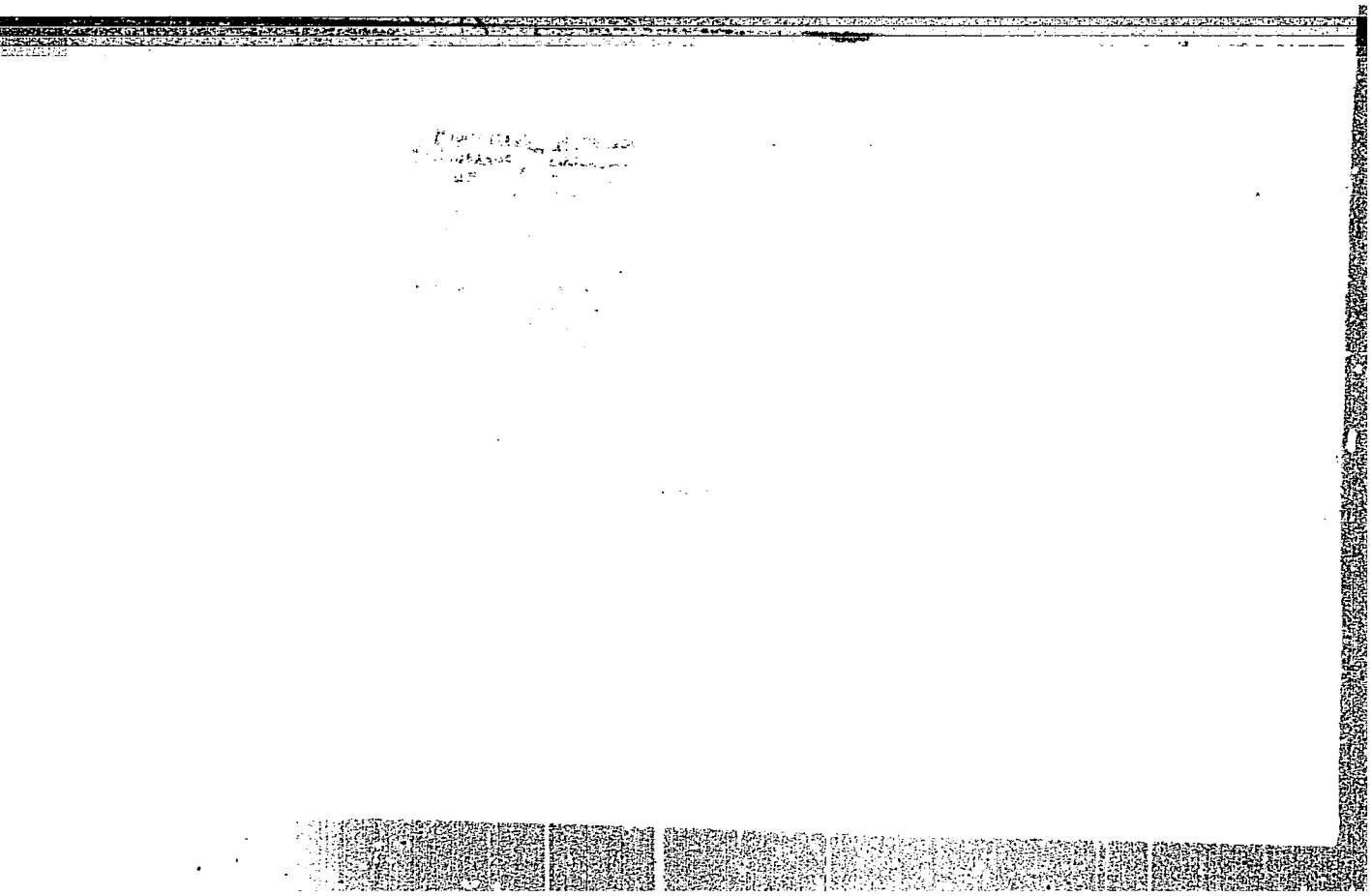

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

Steady hanging mercury electrode in analytical chemistry. Wiktor Kemula and Zenon Kublik (Univ. Warsaw). *Chem. Anal. (Warsaw)* 3, 483–8 (1958) (English summary); cf. Barker and Jenkins, *C.A.* 49, 1530*f*.—In order to obtain a const.-vol. Hg drop, a device similar in action to the micrometric screw was constructed. An electrode of this kind, when used as a cathode, makes possible pptn. of metallic ions present in the soln. and amalgamation with Hg. The behavior of Pb^{++}, Cu^{++}, Cd^{++}, and Zn^{++} was studied. The method makes it possible to det. about 10^{-4} *M* concns.
Z. Kuwtyka

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KEMULA, W.

Chromatopolarographic investigations. XII. Differential polarography in measuring concentration of eluate from the chromatographic column. Wiktor Kemula, Stanisław Brzozowski, and Karol Butkiewicz. *Chem. Anal.* (Warsaw) 3, 489–94 (1958) (English summary); *cf. C.A.* 51, 18479c.—Two dropping electrodes, one for analyzing the effluent and the other as reference electrode, were used. The velocities of eluating were the same for both columns. The method was tested on 2,4- and 2,5-$(O_2N)_2C_6H_3Cl$ mixts. Expts. were made on 6-cm. columns at the rate of 10 and 8 ml./hr. NaBr was used as standard soln. The method gave satisfactory results. It permits the use of galvanometers with high sensitivities even in the case of solns. contg. considerable amts. of org. substances. The method makes it possible to increase considerably the sensitivity of ordinary chromatopolarography (about 20-times for 2,4- and 2,5-$(O_2N)_2C_6H_3Cl$ mixts. (Kemula *et al.*, *C.A.* 50 3950g).

Z. Kurtyka.

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COUNTRY : Poland E-2
CATEGORY :

ABS. JOUR. : RZKhim., No. 1959, No. 86203

AUTHOR : Kemula, W.; Hulanicki, A.; Janowski, A.
INST. :
TITLE : Photometric Determination of Traces of Chlorides.

ORIG. PUB. : Chem. analit., 1958, 3, No 3-4, 581-585

ABSTRACT : Determination of traces of Cl^- is based on weakening of red coloration of solution of the complex of Hg^{2+} with diphenylcarbazone (I) in the presence of Cl^- ions, which form a more stable complex with Hg^{2+}. To solution being analyzed, containing 10-60 X Cl^-, are added 10 ml of 0.02% solution of I (200 mg I dissolved in 100 ml ethanol and 10 ml of resultant solution are diluted with water to 100 ml), 0.025 N NaOH until the yellow solution turns red, 0.05 N HNO_3 until red color changes to yellow, and then an additional 1 ml 0.05 N HNO_3, followed by 1 ml 2% solution of gum arabic (to stabilize color of solution of complex of Hg^{2+} with I), and 2 ml 0.001 N solution $Hg(NO_3)_2$. The

CARD: 1/2

COUNTRY : Poland E-2
CATEGORY :
APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

ABS. JOUR. : RZKhim., No. 1959, No. 86092

AUTHOR : Kemula, W.; Janowski, A.
INST. :
TITLE : Photometric Investigation of the Reaction of Hg^{2+}-Ions with Diphenylcarbazone.

ORIG. PUB. : Chem. analit., 1958, 3, No 3-4, 587-591

ABSTRACT : It was ascertained photometrically that in the composition of the colored product formed on interaction of Hg^{2+} and diphenylcarbazone (I), at pH 3-7, Hg and I are contained at a 1:1 ratio. On the basis of data secured on studying correlation between optic density of solutions of the complex, and concentration of H^+ ions, the assumption is made that composition of colored complex in solution corresponds to formula $HgHD^+$, wherein HD^- is 1 anion, which is the product of the 1st step of acidic dissociation of I. -- A. Nemodruk.

CARD:

CATEGORY :

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, W.

The development of analytical chemistry in Poland. p. 187.

CHEMIA ANALITYCZNA. (Komsija Analitcyczna Polaskiej Akademii Nauk i Naczelna Organizacja Techniczna) Warszawa, Poland. Vol. 3, no. 3/4 1958

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 7, July 1959

Uncl.

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Kemula, W.; Hulanicki, A.

Determination of lithium in ammonium fluoride and in hydrochloric acid. p. 721.

CHEMIA ANALITYCZNA. (Komisja Analityczna Polskiej Akademii Nauk i Naczelna Organizacja Techniczna).

Warszawa, Poland, Vol. 3, no. 5/6, 1958.

Monthly list of East European Accessions (EEAI) LC, Vol. 8, No. 8, August 1959. Uncla.

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Kemula, W., and others.

Determination of lithium, sodium potassium, and calcium in perhydrol by the method of flame spectrography. p. 729.

CHEMIA ANALITYCZNA. (Komisja Analityczna Polskiej Akademii Nauk i Naczelna Organizacja Techniczna).

Warszawa, Poland, Vol. 3, no. 5/6, 1958.

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KEMULA, W.; KORNACKI, J.

Polarographic method of determining lead in perhydrol, hydrofluoric acid, and ammonium fluoride. p. 825.

CHEMIA ANALITYCZNA. (Komisja Analityczna Polskiej Akademii Nauk i Naczelna Organizacja Techniczna) Warszawa, Poland. Vol. 3, No. 5/6, 1958

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 8, August 1959

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KEMULA, W.; KORNACKI, J.

Polarographic determination of sulfates in perhydrol. p. 831.

CHEMIA ANALITYCZNA. (Komisja Analityczna Polskiej Akademii Nauk i Naczelna Organizacja Techniczna) Warszawa, Poland. Vol. 3, No. 5/6, 1958

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KEMULA, W.; RUBEL, S.

Polarographic determination of lead and iron in perhydrol and of copper, lead, and iron in hydrofluoric acid and in ammonium fluoride. p. 837.

CHEMIA ANALITYCZNA. (Komisja Analityczna Polskiej Akademii Nauk i Naczelna Organizacja Techniczna) Warszawa, Poland. Vol. 3, No. 5/6, 1958

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KEMULA, W.; WOLFRAM, W.

Determination of phosphorus and silicon traces in perhydrol and of silicon in ammonium fluoride. p. 897.

CHEMIA ANALITYCZNA. (Komisja Analityczma Polskiej Akadomii Nauk i Naczelna Organizacja Techniczna) Warszawa, Poland. Vol. 3, No. 5/6, 1958

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KEMULA, W.; BRZOZOWSKI, S; JANOWSKI, A.

Colorimetric determination of boron in perhydrol. p. 905.

CHEMIA ANALITYCZNA. (Komisja Analityczna Polskiej Akademii Nauk i Naczelna Organizacja Techniczna) Warszawa, Poland. Vol. 3, No. 5/6, 1958

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KEMULA, W.; BRACHACZEK, W.; HULANICKI, A.

Determination of platinum in perhydrol and ammonium fluoride by means of extraction titration. p. 913.

CHEMIA ANALITYCZNA. (Komisja Analityczna Polskiej Akademii Nauk i Naczelna Organizacja Techniczna) Warszawa, Poland. Vol. 3, No. 5/6, 1958

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KEMULA, W.; BRACHACZEK, W.; HULANICKI, A.

Absorptiometric determination of cadmium traces in perhydrol and hydrogen fluoride. p. 923.

CHEMIA ANALITYCZNA. (Komisja Analityczna Polskiej Akademii Nauk i Naczelna Organizacja Techniczna) Warszawa, Poland. Vol. 3, No. 5/6, 1958

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 8, August 1959

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, W.; JANOWSKI, A.

Mercurimetric determination of chlorides in perhydrol. p. 933.

CHEMIA ANALITYCZNA. (Komisja Analityczma Polskiej Akademii Nauk i Naczlna Organizacja Techniczna) Warszawa, Poland. Vol. 3, No. 5/6, 1958

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 8, August 1959

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, W.; BRACHACZEK, W.; KORNACKI, J.

Nephelometric determination of sulfates in perhydrol. p. 939.

CHEMIA ANALITYCZNA. (Komisja Analityczna Polskiej Akademii Nauk i Naczelna Organizacja Techniczna) Warszawa, Poland. Vol. 3, No. 5/6, 1958

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 8, August 1959

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KEMULA, W.

POLAND/Optics - Spectroscopy. K

Abs Jour : Ref Zhur Fizika, No 11, 1959, 26134

Author : Kemula, W., Grabowska, A.
Inst : [redacted]
Title : The Reactivity of Aromatic Hydrocarbons in the Excited Triplet State. I. Absorption Spectra and Photochemical Reactions of Benzene and Naphthalene in the Presence of Nitric Oxide.

Orig Pub : Bull. Acad. polon. sci. Ser. sci. chim. geol. et geogr., 1958, 6, No 12, 747-753, LIII-LIV

Abstract : A study was made of the influence of NO on the forbidden absorption $T \leftarrow S_0$ (singlet ground state $\rightarrow$ triplet excited state) of benzene and naphthalene. In accordance with the results of Evans, an increase is observed in the absorption, analogous to that appearing in the presence of O_2. This effect is connected with the removal of the forbiddenness of the transition in the field of the

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POLAND/Optics - Spectroscopy. K

Abs Jour : Ref Zhur Fizika, No 11, 1959, 26134

paramagnetic molecule NO. It is observed that irradiation in the region of the band $T \rightarrow S_0$ leads to a chemical reaction in the benzene NO system, wherein the reacting benzene molecule is in the lower excited triplet state. The absorption spectra and the polarographic behavior of the reaction products are compared with the properties of n-benzoquinone-dioxime. It is established that although this product is not identical with n-benzoquinone dioxime, it is a different isonitrose-compound. Similar effects are observed in the case of naphthalene. The found variations of the spectrum are explained as a superposition of weakly-forbidden absorption and a strong reaction product. The observed photochemical reaction is considered as a chemical proof of the biradical triplet state of the aromatic hydrocarbons.

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Chemia, 40,

Distr: 4E3d/4E2c(j)

Cyclic voltametry using the stationary hanging-mercury-drop electrode. II. Investigation of the mechanism of reduction of nitrobenzene. Wiktor Kemula and Zenon Kublik (Univ. Warsaw). *Rocznik Chem.* 32, 941-51(1958) (English summary); cf. *Anal. Chim. Acta* 18, 104(1958).—The polarographic reduction of aq. solns. of nitrobenzene (I) in different buffers (pH 2-14) gave only one wave; and no intermediate products could be detected. Using a hanging-Hg-drop electrode with alternating current of varying frequency and amplitude or with const. voltage direct current enabled the authors to follow the kinetics of formation of different intermediate products having more pos. half-wave potentials than the initial compds. Reduction of I led to phenylhydroxylamine (II), which could be oxidized to nitrosobenzene (III) at lower voltage (0.22 v.). At 0.28 v. III was reduced to II. The redox potential of the I-II system decreased with increasing pH of the soln. In strongly alk. solns. III reacted with II forming azoxybenzene (IV). Electrolysis of pure IV under the same conditions proved that like camphor, it behaves as a surface-active agent, and influences the formation of the I-II redox system. The I-II system appeared only at voltages exceeding −0.6 v.

A. Krzeglewski

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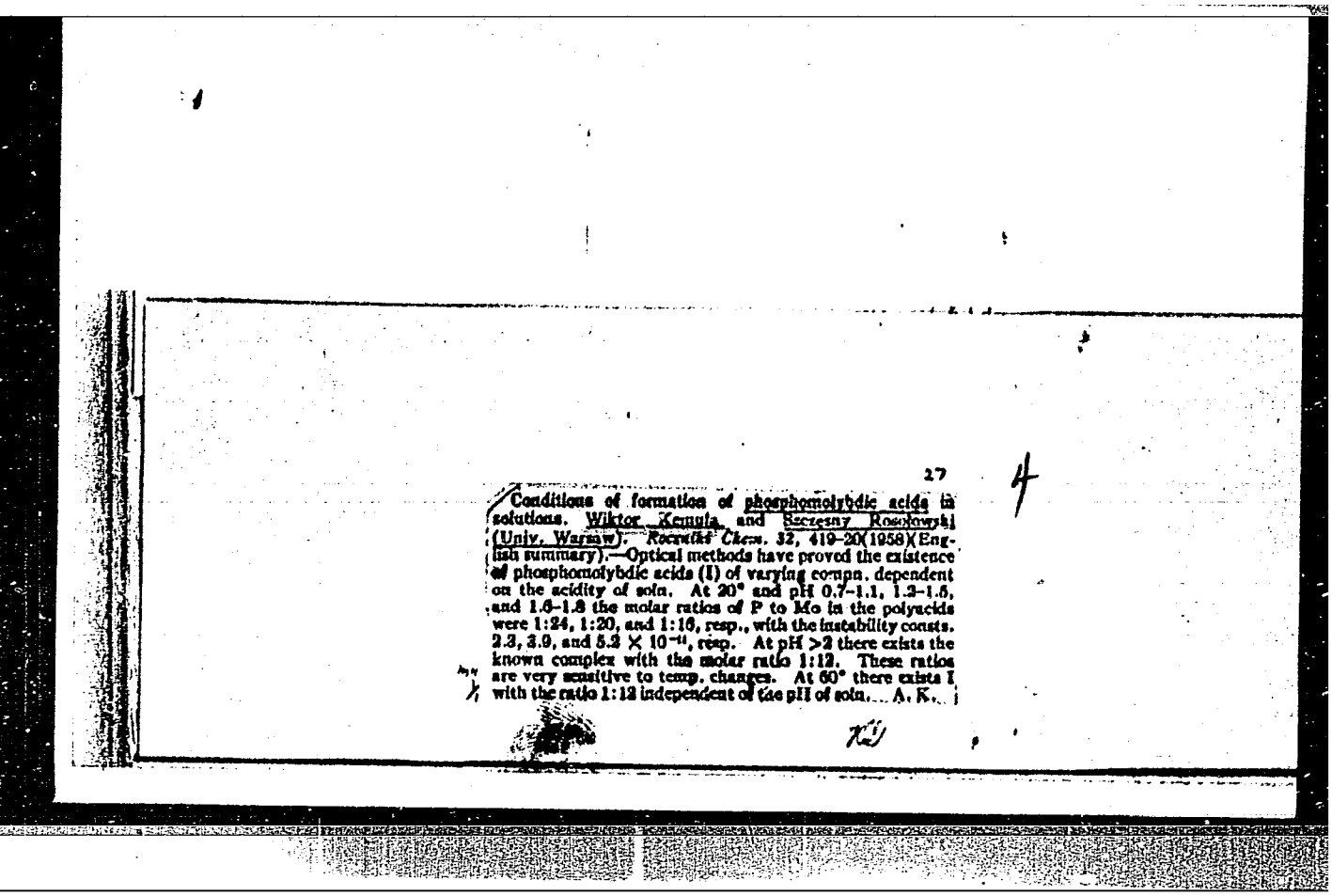

27

Conditions of formation of phosphomolybdic acids in solutions. Wiktor Kemula and Seczesny Rosołowski (Univ. Warsaw). *Roczniki Chem.* 32, 419–20(1958)(English summary).—Optical methods have proved the existence of phosphomolybdic acids (I) of varying compn. dependent on the acidity of soln. At 20° and pH 0.7–1.1, 1.2–1.5, and 1.6–1.8 the molar ratios of P to Mo in the polyacids were 1:24, 1:20, and 1:16, resp., with the instability consts. 2.3, 3.9, and 5.2 × 10^{-41}, resp. At pH >2 there exists the known complex with the molar ratio 1:12. These ratios are very sensitive to temp. changes. At 60° there exists I with the ratio 1:12 independent of the pH of soln. A. K.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

Distr: 4E3d/4E2c(j)

Certain cases of the anomalous polarographic reduction of iodate and bromate ions. W. Kemula and E. Rakowska (Polish Acad. Sci., Warsaw). *Z. physik. Chem.* (Leipzig) Sonderheft July, 1958, 33–45.—Investigation of the conditions which lead to the occurrence of a min. in the limiting current for reduction of IO_3^- and BrO_3^- established the following facts: (1) No min. occurs with KCl only as supporting electrolyte. (2) A min. occurs for the first reduction step if $MgCl_2$ (or the chloride of another multivalent cation whose hydroxide is insol.) is the supporting electrolyte. (3) The height of the limiting current increases and the depth of the min. diminishes as $MgCl_2$ concn. is increased, but the equiv. ratio, Mg^{++}/anion, at which the min. occurs depends on the overall electrolyte concn. Similar results ensue if the ionic strength of a soln. contg. $MgCl_2$ is increased by addn. of KCl. (4) Addn. of either NH_4Cl or gelatin largely nullifies the min.-producing effect of $MgCl_2$. (5) The reduction of org. nitro compds. undergoes similar changes to those found for IO_3^- and BrO_3^-. It was concluded that the effects of multivalent cations are connected with the pptn. of their insol. hydroxides on the surface of the Hg drop as a result of OH^--ion production at the drop accompanying the reduction. However, this explanation was not entirely satisfactory when applied to the data on the org. nitro compds.

H. K. Zimmerman

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Distr: 4E3d

Observation of transient intermediates in oxidation-reduction processes by variable voltage oscillopolarography and cyclic voltammetry. W. Kemula and Z. Kublik (Univ. Warsaw). *Nature* 182, 793–4(1958).—The use of a "hanging" Hg drop electrode and current of any frequency improved interpretation of results and permitted observation of short-lived intermediates in soln. The system was used in the 6-electron reduction of *p*-nitroaniline and unidentified products. P. B. Ritt

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KEMULA, WIKTOR

Wiktor Kemula, Zbigniew Galus, Zenon Kublik, "Application of the Hanging Mercury Drp Electrode to an Investigation of Intermetallic Compounds in Mercury," Nature, Vol. 182, No. 4644, 1 Nov 58, pp 1228-29.

Published from the Inst. of Physical Chemistry, Polish Academy of Sciences. Received 1 Sep 58.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA,W.; KUBLIK,Z.

Cyclic voltammetry with application of the hanging mercury drop electrode. I. Investigation of the mechanism of the reduction of p-nitroaniline. Bul Ac Pol Chim 6 no.10:653-659 '58. (EEAI 9:6)

1. Institute of Physical Chemistry, Polish Academy of Sciences. Communicated by W. Kemula.
(Nitroaniline) (Voltammetry)
(Electrodes, Mercury)

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KEMULA, W.

4

1 - [illegible] (WB)

The polarographic and spectrophotometric study of p-aminobenzaldehyde. Wiktor Kemula, Ewa Teresa Bartel, and Wiesława Rubaszewska (Polish Acad. Sci., Warsaw). *Roczniki Chem.* 33, 1117-24(1959)(in English); cf. *CA* 51, 12708df.—A previous polarographic study of p-dimethylaminobenzaldehyde (I) revealed the existence of 2 waves at pH 8 which form a system of kinetic recombination currents owing to proton transfer occurring prior to the electroredn. step. The calcd. value of the recombination rate was abnormally high. The present study of p-aminobenzaldehyde (II) was undertaken to det. if this anomaly exists for compds. similar to I. The ultraviolet absorption spectrum of II showed max. at 230 and 320 mμ. A change in pH did not cause a shift in the max. at 320 mμ. The max. at 236 mμ shifted to 245 mμ in acid soln. At the same time ε rose from 6170 to 12,600. The increase in ε was also observed for I, but no shift occurred. In alk. medium, 2 well-defined polarographic waves were obtained for II analogous to I. With increasing pH the more pos. wave diminished and the more neg. increased. Calcn. of the recombination-rate const. of II yielded a value similar to that of I.

Gene A. Hyde

Katedra Chemii Nieorganicznej Uniwersytetu, Warszawa i Zakład Fizykochemicznych Metod Analitycznych Instytutu Chemii Fizycznej PAN

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KEMULA, W.

9

The influence of gold in a mercury electrode on some electrode processes. Wiktor Kemula, Zbigniew Galus, and Zenon Kublik (Univ. Warsaw). *Roczniki Chem.* 33, 1431–41 (1959)(English summary).—The often used electrode with small Hg drops on Au or Au-plated Pt wires is an amalgam (I) electrode and can influence the processes by formation of intermetallic compds. The surface concn. of Au was evaluated for Hg drops of 0.05 cm., and Au wires of 0.01 and 0.005 cm. radius and I were prepd. Pronounced effect of Au on Zn electrode processes was observed, starting with 0.001% Au in I. The relatively stable compd. AuZn was formed and was not oxidized at the reversible Zn potential. The effect on Cd was less significant. The technique of prepn. of hanging Hg drop electrodes (*CA* 53, 21374e) is recommended to avoid errors due to the above processes. A. Krzęlewski.

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KEMULA, W

4

Influence of platinum in mercury on the mechanism of electrode reactions at the mercury electrode. Wiktor Kemula, Zenon Kublik, and Zbigniew Galus (Polish Acad. of Sci., Warsaw). *Nature* 184, Suppl. No. 23, 1795–6 (1959).—A hanging Hg drop electrode and a Hg-plated Pt sphere of identical diameter, immersed in the same solns., were polarized cyclically; or, after a concn. electrolysis, an anodic oxidn. curve was recorded. Aq. solns. of salts of Tl, Pb, Sn, Sb, Cd, and Zn were studied. With Zn, Sb, and Sn, significant differences were observed. Thus, oxidn. of Zn was completely inhibited at the Hg-plated Pt electrode. It is proposed that the Zn (or Sb or Sn) formed an intermetallic compd. with Pt in the Pt amalgam. This compd. could be oxidized at more pos. potentials than the Hg oxidn. potential. Cd and traces of Pb were sepd. from Zn more effectively with the Hg-plated Pt electrode, because the thinner Hg film reduced the time required for oxidn.

Martin Allen

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, W.

Influence of gold in a mercury electrode on certain electrode processes. Wiktor Kemula, Zenon Kublik, and Zbigniew Galus (Polish Acad. Sci., Warsaw). *Nature* 184, No. 4688 56–7(1959).—The electropos. potential of a Au wire for a hanging-Hg microelectrode can lead to erratic results, if the formation of intermetallic compds. is neglected. The influence of Au decreased with elapsed time after the 1st drop was suspended from the electrode. It could be neglected only if the Au concn. in the resulting amalgam was <0.001%.

Walter R. Averett

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KEMULA, W.

Distr: 4E3d

Clathrate compounds in chromatography. W. Kemula and D. Sybilska (Polish Acad. Sci., Warsaw). *Nature* 185, 237–8 (1960).—Quant. chromatographic sepn. of isomers is effected by use of clathrate compds. Isomeric nitrophenols, nitroanilines, chloronitrobenzenes, nitrotoluenes, and nitroaliphatic compds. are efficiently sepd. by a column 17 cm high with an inner diam. of 5.8 mm. prepd. with tetrakis(4-methylpyridine)nickel dithiocyanate as the stationary phase, 2.5*M* KSCN in 10% (by wt.) 4-picoline in H_2O as the mobile phase, the eluent being 0.25 *M* KSCN in 2% (by wt.) 4-picoline in H_2O.
R. Esada

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

Determination of iron, copper, and lead traces in metallic silver. Wiktor Kemula, Krystyna Brajter, Stefania Cieślik, and Hanna Szymańska. *Chem. Anal.* (Warsaw) 4, 409–15 (1959)(English summary).—A method is described for detg. impurities in refined Ag, namely Fe 0.006–0.01, Cu 0.02–0.05, and Pb 0.003% (Norwitz, *C.A.* 46, 3453c; Pomeranz, *C.A.* 36, 3116⁶; Kheifits and Cherezova, *C.A.* 44, 3836i). A sample was dissolved in concd. HNO_3, evapd., dild. with H_2O, and passed through a column 20 cm. high and 0.7 cm. in diam. packed with Wofatit KPS-200. The adsorbed cations were eluated with *N* KCl, with NH_4 salicylate (Fe^{+++}), and with HCl. Cu was sepd. from Pb on Wofatit 150L ion-exchange column 7 cm. high and 0.5 cm. in diam. Cu was found in the eluate and Pb was removed with 0.001*N* HNO_3. Fe, Cu, and Pb were detd. polarographically: Fe in *N* NH_4OH and *N* NH_4 salicylate, Cu in 1.5*N* NH_4OH and 1.5*N* NH_4Cl, and Pb in *N* KNO_3. Max. errors were below 4% for Fe, 10 for Cu, and 10% for Pb.

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KEMULA, W

Polarographic investigation of cadmium amalgam in alkaline solutions. Wiktor Kemula and Jadwiga Dijikło (Univ. Warsaw). *Rocznik Chem.* 33, 451–60 (1959) (English summary).—It was found that in 0.2*N* KCl and in concd. NaOH solns. the anodic wave of Cd amalgam (I) had the same half-wave potential as the cathodic wave of Cd in the same solns. Hence the process is reversible. A study of dissoln. of Cd from 2×10^{-4} and 10^{-3} *M* I showed a sharp break of the anodic wave due to formation of $Cd(OH)_2$. It disappeared in concd. NaOH solns. by formation of sol. complexes. The half-wave potential changed from −0.60 to −0.91 v. with increase of concn. up to 15*N* NaOH. The anodic waves of the more concd. I reached the limiting current for more pos. potentials in NaOH than in KCl solns. which was probably due to damping of the current by the $Cd(OH)_2$ ppt. This action appeared when a polymol. film was formed on the electrode. A. Krzeżewski

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

The effect of acidity and concentration of buffers on partition coefficients of dilute solutions of acids and bases and on selectivity of a liquid-liquid system. Wiktor Kemula and Henryk Buchowski (Univ. Warsaw). J. Phys. Chem. 63, 155–9(1959).—The partition coeffs. of 8 basic and acidic nitro compds. between org. solvents and buffer solns. of various aciditics were measured. The observed changes in partition coeffs. were related to the acidity functions H_- or H_0 of the polar phase. A method was described for the detn. of the ionization consts. and partition coeffs. of un-ionized mols. from the partition data. The effect of concd. acids on partition coeffs. and the relation between acidity and selectivity are discussed. Henry Leidheiser, Jr.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, W. ; SYBILSKA, D.

Chromatopolarographic studies. XIII. Analysis of aliphatic nitro-compound mixture. p. 123.

CHIMIA ANALITYCZNA. Warszawa, Poland. No. 8, August 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 11 November 1959.

Uncl.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, W.; DOJLIDO, J.

Polarographic investigation of cadmium amalgam in alkaline solutions. p. 451

ROCZNIKI CHEMII. (Polska Akademia Nauk) Warszawa, Poland, Vol. 33, no. 2, 1959

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 9, September 1959. Uncl.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, Wiktor; CHODKOWSKI, Jerzy; BALASIEWICZ, Michal; KORNACKI, Jacek; RAKOWSKA, Ewa; VINCENZ, Alina

Polarographic investigation of some derivatives of ρ-nitroacetophenone, ρ-nitropropiophenone, and 1-ρ-nitrophenyl-1,3-propanediol. Rocz chemii 33 no.6:1485-1493 '59. (EEAI 9:9)

1. Katedra Chemii Nieorganicznej Uniwersytetu, Warszawa. Zaklad Fizykochemicznych Metod Analitycznych Instytutu Chemii Fizycznej Pol Polskiej Akademii Nauk, Warszawa.
(Polarograph and polarography)
(Nitroacetophenone)
(Nitropropiophenone)
(Nitrophenylpropanediol)

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COUNTRY : POLAND
CATEGORY : Physical Chemistry. Electrochemistry B

ABS. JOUR. : RZKhim., No. 1 1960, No. 623

AUTHOR : Kemula, W.; Kublik, Z.
INST. : Polish AS
TITLE : Cyclic Voltammetry with Application of the Hanging Mercury Drop Electrode. I. Investigation of the Mechanism of the Reduction of*

ORIG. PUB. : Bull. Acad. polon. sci. Ser. sci. chim., geol. et geogr., 1958, 6, No 10, 653-659, LVII

ABSTRACT : With the aid of the hanging mercury drop electrode (RZhKhim., No 23, 1958, No 77197), by a method of measurement of polarograms and oscillographic polarograms (OP) according to Geygerovskiy and cyclic voltammetric curves (CVC), the mechanism of the reduction of p-nitroaniline (I) at pH 2-13 was studied. In acid solutions,

*p-nitroaniline

CARD: 1/5

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

COUNTRY : B
CATEGORY :

ABS. JOUR. : RZKhim., No. 1 1960, No.623

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : on the polarograms and CVC there is one wave,
cont'd or the peak of reduction of I at -0.8 v. At pH>7, a new reversible oxidation-reduction system formed by p-phenylenediamine (II) and p-quinonediimine is found at -0.2 v, which is confirmed by the measurements of CVC in pure solutions of II. On OP, in the solution of I, two pairs of deflections at -0.2 and -0.55 v, corresponding to two reversible

CARD: 2/5

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, W.; GALUS, Z.

The application of the"hanging drop" method to the evaluation of the composition of intermetallic compounds in mercury. Bul Ac Pol chim 7 no.8:553-557 '59. (EEAI 10:4)

1. Department of Inorganic Chemistry, Warsaw University, Presented by W.Kemula.
(Chemical compounds) (Mercury) (Electrolytes)
(Electrodes) (Polarograph and polarography)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, Wiktor; BRACHACZEK, Wanda; HULANICKI, Adam

Determination of mercury in brine and caustic soda by extractive titration. Chem anal 5 no.2:215-218 '60. (EEAI 10:3)

1. Katedra Chemii Nieorganicznej Uniwersytetu, Warszawa. Zaklad Fizykochemicznych Metod Analitycznych Instytutu Chemii Fizycznej Polskiej Akademii Nauk, Warszawa.
(Mercury) (Salt) (Sodium hydroxide)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, Wiktor; BRAITER, Krystyna

Exploitation of ion-exchange properties of paper for Cd^{2+} and In^{3+} separation. Chem anal 5 no.2:219-224 '60. (EEAI 10:3)

1. Zaklad Chemii Nieorganicznej Uniwersytetu, Warszawa.
(Ion exchange) (Paper) (Cadium) (Indium)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, Wiktor; BRAJTER, Krystyna; CIESLIK, Stefania; LIPINSKA-KOSTOWICKA, Hanna

Application of ion exchangers to the determination of silver in low-percentage copper ores. Chem anal 5 no.2:225-228 '60. (EEAI 10:3)

1. Katedra Chemii Nieorganicznej Uniwersytetu, Warszawa.
(Ion exchange) (Silver) (Copper)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, Wiktor; BRAJTER, Krystyna; CIESLIK, Stefania; LIPINSKA-KOSTROWICKA, Hanna

Determination of small amounts of iron, manganese, and copper in nickel. Chem anal 5 no.2:229-234 '60. (EEAI 10:3)

1. Katedra Chemii Nieorganicznej Uniwersytetu, Warszawa.
(Nickel) (Iron) (Manganese) (Copper)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, Wiktor; ROSOLOWSKI, Szczesny

Absorptiometric investigations of germanomolybdic acid. Rocz chemii 34 no.3/4:835-842 '60. (EEAI 10:3)

1. Katedra Chemii Nieorganicznej Uniwersytetu, Warszawa.
(Absorptiometer) (Germanium) (Molybdic acids)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA,W.; GALUS,Z.; KUBLIK,Z.

A new voltammetric method of investigation of the formation of intermetallic compounds using the hanging mercury electrode. Bul Ac Pol chim 6 no.10:661-668 '58. (KRAI 9:6)

1. Institute of Physical Chemistry, Polish Academy of Sciences. Communicated by W. Kemula.
(Chemical compounds) (Voltammetry)
(Electrodes, Mercury)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA,W.; GRABOWSKA,A.

The reactivity of aromatic hydrocarbons in the excited triplet state. I. Absorption spectra and photochemical reactions of benzene and naphthalene in the presence of nitric oxide. Bul Ac Pol chim 6 no.12:747-753 '58. (EEAI 9:6)

1. Department of Inorganic Chemistry, Warsaw University. Presented by W. Kemula.
(Benzene) (Naphthalene) (Nitrogen oxides)
(Aromatic compounds) (Hydrocarbons)
(Absorption spectra)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

E-3

COUNTRY : Poland

CATEGORY :

17587

ABS. JOUR. : RZKhim., No. 5 1960, No.

AUTHOR :

INST. :

TITLE :

ORIG. PUB. :

ABSTRACT : When the development is carried out with a mixture of I + phosphate buffer solution (pH 6.8) with KCl (IX), using a 370 x 6 mm column and an ER of 10 ml/hr, VI, VII, and VIII can be separated. IV, V, and $C_6H_4(NO_2)_2$ can be separated in a 200 x 6 mm column with a ER of 6 ml/hr, using the system I-50% alcohol (pH 6,8). V, VI, VII, and VIII are separated in a 350 x 6 mm column with a ER of 7 ml/hr by the successive application of different solvents containing the following mobile phases:

CARD: 2/4

ABSTRACT : 0.1 N H_2SO_4 (X)-0.1 N aqueous II, 0.1 N X-0.1 N II solution in 50% III, 0.1 N X-0.1 N II solution in 70% III. When a mixture of mono- and di-NC is chromatographed on cellulose acetate which has been treated with C_6H_5OH, [illegible] solution with a solution of IX, $C_2H_4(NO_2)_2$ is eluted first, followed by VII, VIII, and last, a mixture of VI and $C_3H_6(NO_2)_2$ (150 x 6 mm column, ER 10 ml/hr). In the quantitative determinations of 0.20 mg VII, 0.36 mg VI, 0.62 mg V, and 0.79 mg IV, the error

130

CARD: 3/4

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

COUNTRY : POLAND E
CATEGORY : Analytical Chemistry. Analysis of Inorganic Substances
ABS. JOUR. : RZKhim., No. 1 1960, No. 879

AUTHOR : Komula, W.; Brajter, K.; Cieslik, S.; Lipinska, H.
INST. : -
TITLE : Determination of Trace Quantities of Copper, Iron and Lead in Metallic Silver

ORIG. PUB. : Chem. analit. (Polska), 1959, 4, No 1-2, 409-415
ABSTRACT : A sample of analyzed silver is dissolved in conc. HNO_3, the solution is evaporated, diluted with water and passed through a column with the cationite Wofatit KPS-200. The sorbed Ag is precipitated in the form of AgCl by washing the column with 1 n. KCl solution, and then Fe is eluated using 0.2-0.4 n. ammonium salicylate as an eluent solution. Cu and Pb, which remain in the column, are extracted

CARD: 1/2

E-19

ABS. JOUR. : RZKhim., No. 1 1960, No. 879
AUTHOR :
INST. :

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

ORIG. PUB. :

ABSTRACT (cont'd) : with 1.2-4.8 n. HCl solution. HCl solution is passed through an anionic column with Wofatit 150-L, whereupon Cu passes into the filtrate and Pb is sorbed by the resin; thereafter, Pb is washed off with a 0.001 n. HNO_3 solution. After separation of the cations from one another, the solutions are polarographed. The described method was used for the determination of 0.05% Cu, 0.006% Fe and 0.003% Pb in metallic silver.-- K. Polyanskiy

CARD: 2/2

Distr: 4E2c

Chronopotentiometric studies on the kinetics of the formation of intermetallic compounds in mercury. W. 4

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA,W.; GALUS,Z.; KUBLIK,Z.

Investigation on the influence of platinum in mercury electrodes on certain electrode processes. Bul Ac Pol chim 7 no.10:723-728 '59. (EEAI 9:6)

1. Institute of Physical Chemistry, Polish Academy of Sciences. Department of Inorganic Chemistry, Warsaw University. Communicated by W.Kemula.

(Electrodes) (Amalgams) (Platinum) (Mercury)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA,W.; GALUS,Z.

Application of the hanging mercury drop method to the study of formation of some metal amalgams. Bul Ac Pol chim 7 no.10:729-735 '59. (KRAI 9:6)

1.Department of Inorganic Chemistry, Warsaw University. Communicated by W.Kemula.
(Amalgams) (Electrodes) (Mercury)
(Iron) (Nickel) (Cobalt)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, Wiktor; BRAJTER, Krystyna; CIESLIK, Stefania; LIPINSKA, Hanna

A quick chromatographic method of determining copper in metallic silver and silver nitrate. Chem anal 4 no.5/6:855-861 '59.
(EEAI 9:9)

1. Katedra Chemii Nieorganicznej Uniwersytetu, Warszawa.
(Chromatography) (Copper) (Silver nitrate) (Silver)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, W.; ROZOLOWSKI, S.

Absorptiometric studies on the formation of molybdosilicic acids.
Bul Ac Pol chim 7 no.5:351-353 '59. (EEAI 9:9)

1. Department of Inorganic Chemistry, Warsaw University. Presented by W.Kemula.
(Silicomolybdic acids) (Absorptiometer)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, Wiktor; GRABOWSKI, Zbigniew R.; BARTEL, Ewa Teresa

Polarographic kinetic currents due to the reaction of p-dimethylaminobenzaldehyde with proton donors. Rocz chemii 33 no.4/5:1125-1135 '59. (EEAI 9:9)

1. Katedra Chemii Nieorganicznej Uniwersytetu Warszawa i Zaklad Fizykochemicznych Metod Analitycznych Instytutu Chemii Fizycznej Polskiej Akademii Nauk, Warszawa
(Polarograph and polarography)
(Dimethylaminobenzaldehyde)
(Protons)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, Wiktor; GALUS, Zbigniew; KUBLIK, Zenon

Influence of the presence of gold in a mercury electrode on some electrode processes. Rocz chemii 33 no.6:1431-1441 '59. (EEAI 9:9)

1. Katedra Chemii Nieorganicznej Uniwersytetu, Warszawa i Zaklad Fizykochemicznych Metod Analitycznych Instytutu Chemii Fizycznej Polskiej Akademii Nauk, Warszawa.
(Gold) (Mercury) (Electrodes, Mercury)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, Wiktor; WERONSKI, Emilian

Influence of surface active substances on polarographic waves. II. The comparison of the influence of nonpolar hydrocarbons and polar camphor on the polarographic curves of cupric ions. Rocz chemii 34 no.3/4:1023-1032 '60. (EEAI 10:3)

1. Katedra Chemii Nieorganicznej Uniwersytetu, Warszawa.
(Polarograph and polarography)
(Surface-active substances) (Camphor)
(Hydrocarbons) (Copper) (Ions)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, WIKTOR

Potentiometric and amalgam polarographic [illegible]
of the Zn Hg Zn [illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, WIKTOR

4

JAJ(KMX(MA))

Absorptiometric investigations of germanomolybdic acid.
Wiktor Kemula and [illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, Wiktor; ROSOLOWSKI, Szczesny

Photometric determination of silicon as γ-molybdosilic acid
Chem anal 5 no.3:419-428 '60. (KEAI 10:8)

1. Katedra Chemii Nieorganicznej Uniwersytetu, Warszawa.
(Photometry) (Silicon) (Silicomolybdic acid)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, Wiktor; KRZEMINSKA, Alicja

Chromatopolarographic investigations. XIV. Separation and quantitative evaluation of isomers of DDT. Chem anal 5 no.4:611-616 '60. (EEAI 10:9)

1. Department of Inorganic Chemistry, University, Warszawa.

(Chromatography) (Polarograph and polarography)
(Trichlorobischlorophenylethane)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, W.; KUBLIK, Z.; TARASZEWSKA, J.

Application of the hanging mercury drop electrode to the investigation of anodic passivation of mercury. Bul chim PAN 8 no.5:269-274 '60.
(EEAI 10:9/10)

1. Institute of Physical Chemistry, Polish Academy of Sciences. Presented by W. Kemula.

(Mercury) (Electrodes, Dropping mercury)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, W.; GRABOWSKA, A.

Reactivity of aromatic hydrocarbons in the excited triplet state. II. Investigation of the photochemical reaction of benzene with nitric oxide. III. Investigation of the photochemical reaction of benzene with oxygen. Bul chim PAN 8 no.9:517-529 '60.

1. Department of Inorganic Chemistry, University, Warsaw. Presented by W. Kemula.

(Aromatic compounds) (Hydrocarbons) (Photochemistry)
(Chemical reactions) (Nitrogen oxides)
(Benzene) (Oxygen)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, W.; RAKOWSKA, E.

Application of the hanging mercury drop electrode to an investigation of halogen complexes of chromium (III). Bul chim PAN 9 no.10: 657-662 '61.

1. Department of Inorganic Chemistry, University, Warsaw and Institute of Physical Chemistry, Polish Academy of Sciences.

(Chromium) (Electrodes, Dropping mercury)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, W.; RAKOWSKA, E.; KUBLIK, Z.

Application of the hanging mercury-drop electrode to an investigation of redox processes of uranium salts by cyclic voltametry. Coll Cz Chem 25 no.12:3105-3110 D '60. (EEAI 10:9)

1. Institute of Physical Chemistry, Polish Academy of Science and Department of Inorganic Chemistry University Warsaw, Poland.

(Electrodes, Dropping mercury) (Uranium)
(Voltameter)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, W.; GRABOWSKI, Z. R.; KALINOWSKI, M. K.

Polarographic oxidation of benzopinacol. Coll Cz Chem 25 no.12: 3306-3312 D '60. (EEAI 10:9)

1. Department of Inorganic Chemistry, University, Warsaw, Poland.

(Polarograph and polarography) (Benzopinacol)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, Wiktor; ROSOLOWSKI, Szczesny

Spectrophotometric studies on the formation of molybdosilic acids.
Rocz chemii 34 no.1:3-15 '60. (EEAI 10:9)

1. Department of Inorganic Chemistry, University, Warsaw.

(Spectrophotometry) (Silicomolybdic acids)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, Wiktor; GALUS, Zbigniew

Application of a hanging mercury-drop electrode to the investigation of properties of complex amalgams. Rocz chemii 34 no.1:251-266 '60. (EEAI 10:9)

1. Department of Inorganic Chemistry, University, Warsaw.

(Electrodes, Dropping mercury) (Amalgams)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

KEMULA, Wiktor; GRABOWSKA, Anna

Comparative determination of the quantum yields of the photolysis of malachite green leucocyanide and of the photohydrolysis of monochloroacetic acid with an uranyl oxalate actinometer. Rocz chemii 34 no.5:1445-1454 '60. (EEAI 10:9)

1. Department of Inorganic Chemistry, University, Warszawa.

(Photochemistry) (Malachite green) (Uranyl oxalates)
(Actinometer) (Chloroacetic acids) (Cyanides)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

S/081/62/000/004/030/087
B149/B101

AUTHORS: Kemula, Wiktor, Brajter, Krystyna, Rubel, Stanisław

TITLE: A method of ferrite analysis. I. The determination of nickel and zinc in mangani-zinc ferrites and nickel-zinc ferrites by polarographic and complexometric methods. II. Complexometric determination of barium in barium ferrites. III. Polarographic determination of manganese and iron

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1962, 150, abstract 4D145 ("Chem. analit." v. 6, no. 3, 1961, 331 - 341, 343 - 346, 346 - 352)

TEXT: I. Complexometric and polarographic methods of determining nickel and zinc in mangani-zinc and nickel-zinc ferrites were worked out. For the complexometric determination of zinc about 200 mg of the ferrite were dissolved in concentrated HCl. In the case of nickel-zinc ferrite F^{2+} was oxidized with concentrated HNO_3, the excess of which was evaporated with added concentrated HCl. The residue was dissolved in 20 ml concentrated

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A method of ferrite analysis. ...

HCl and the solution passed through an ion-exchange column (diameter 8 mm) packed with anionite levatite MP (layer about 24 cm high, the granules of 0.1 - 0.2 mm size) preliminarily treated with concentrated HCl. Fe, Mn, and Ni were eluted from the column with 120 ml of 1.1 N HCl, then Zn was eluted with 100 ml of 0.01 N HCl. 25 - 50 ml of the eluate were diluted with water up to about 100 ml, to that 2N NaOH was added up to pH ~7,2 ml of ammonia buffer solution of pH 10, eriochrome black T (as a mixture with NaCl), and the mixture was titrated with 0.01 M. solution of the complexon III (I), until the color changes from pink to blue. For the determination of Ni, the sample is dissolved in concentrated HCl, Fe^{2+} is oxidized with concentrated HNO_3; after evaporation of the excess of the latter, the solution was further evaporated to approximately 1 ml. To this were added 100 ml of water, 30 ml of 25% solution of tartaric acid, and concentrated NH_4OH to pH 7; then the solution was slightly acidified with acetic acid, warmed to 70°C; 20 ml 1% ethanolic solution of dimethylglyoxime and concentrated NH_4OH with slightly alkaline reaction were added and the solution was kept for 30 min at 70°C. The precipitate of Ni-dimethylglyoximate was filtered, rinsed with water and dissolved in a minimum volume of 2 N

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

S/081/62/000/004/030/087
B149/B101

A method of ferrite analysis. ...

HCl. To this solution 50 ml of 0.01 M solution of I was added, neutralized with 2 N solution of NaOH to pH 7; then a mixture of eriochrome black T and NaCl was added; 2 ml ammoniacal buffer solution with pH 10 was then added and the excess of I titrated with 0.01 M solution of $ZnSO_4$. For polarographic determination of Zn in manganese-zinc ferrites about 200 mm of the sample were dissolved in 5 ml concentrated HCl and diluted with water to 250 ml. To 3 ml of this solution were added 2.5 ml 1 M NH_4SCN, 1 ml of 1 M solution of sodium tartrate, 0.25 ml 0.5% solution of Tylose; this was diluted with water to 25 ml and after passing of H_2, polarographed from -0.75 to 1.25 v. For polarographic determination of Ni and Zn in nickel-zinc ferrites, about 200 mg of the sample were dissolved in concentrated HCl, diluted with water to 200 ml. To 3 ml of this solution were added 2.5 ml 1 M KSCN, 1 ml 1 M. solution of sodium tartrate, 10 ml water, pH was adjusted to 4 - 5, 0.25 ml 0.5% of Tylose added; the mixture was diluted to 25 ml with water and, after passing of H_2, polarographed from -0.45 to 1.25 v. The error in the determination of Zn and Ni by the complexometric method is about 1.5%, the time required is about 2.5 hours.

Card 3/6

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

A method of ferrite analysis. ...

The error in the polarographic method is about 2.5% and the time required about 1.7 hours. II. A method for determination of free Ba in Ba-ferrites was proposed. Barium is precipitated in the form of $BaSO_4$ in the presence of the I which prevents the adsorption of Fe^{3+} by the precipitate $BaSO_4$. The precipitate is dissolved in the alkaline solution of I and excess is titrated with a solution of $MgSO_4$. For the analysis 0.2 g of the sample is dissolved in concentrated HCl, the solution evaporated to dryness, 250ml 0.01 M I added and $BaSO_4$ contained in Ba ferrite filtered off. The precipitate is rinsed with ~50 ml 0.01 M I. The filtrate is heated to boiling and 5 ml 1 N H_2SO_4 is then added (to precipitate the Ba, which enters the ferrite in elemental form) and the mixture is left for 30 min in a boiling water bath. The precipitated $BaSO_4$ is filtered, rinsed with a hot solution of 0.01 M I and finally with water. The filter paper with the precipitate is placed in a beaker, 50 ml 0.01 M I are added, followed by 3 ml of concentrated NH_4OH; the beaker is covered with a watch glass and

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520004-0

A method of ferrite analysis. ...

heated until the precipitate is completely dissolved. After this the watch glass is removed and boiling continued until the smell of ammonia has completely ceased. The liquid is diluted with water to 150 ml, 10 ml of ammoniacal buffer solution with pH 10 and eriochrome black T are added and the excess of I, is titrated with 0.01 M $MgSO_4$, until the blue color changes to violet. The mean error of the determination of Ba is ~1.5%; the time of the experiment is about 3 hours. III. For the polarographic determination of Mn and Fe, 0.2 g of the sample is dissolved in 5 ml concentrated HCl with heating, 0.5 ml of a saturated solution of $KClO_3$ is added, and the mixture is heated until the smell of Cl_2 has ceased; then water is added to 250 ml. To 3 ml of the obtained solution 5 ml of 0.5 M triethanolamine are added and the mixture is shaken for 3 min. Then 8 ml of 1 N KOH are added, resulting in a pH of about 13, then the liquid is shaken for 30 sec; after diluting with water to 25 ml, it is placed in the polarographic cell. It is polarographed after passing H_2 for 15 min (the addition of a small amount of Na_2SO_3 may be substituted for the passing of H_2). $E_{1/2}$ for Fe and Mn is -50 and -1.10 v respectively, referred to a saturated calomel electrode. The experimental error is about 2 - 2.5%.

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A method of ferrite analysis. ...

[Abstracter's note: Complete translation.]

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